

Pointing Device with Adaptive Illumination Level**ABSTRACT**

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A pointing device and method for operating the same is disclosed. The pointing device includes an illumination system, a camera system, and a controller. The illumination system illuminates a surface over which the pointing device moves. The illumination system generates a light level determined by an illumination control signal. The camera records a plurality of images of the illuminated surface. The controller records first and second images taken by the camera at different times and determines a displacement indicative of the direction and distance the positioning device moved between the two different times. The controller also generates the illumination control signal. The illumination control signal depends on at least one of the images recorded by the camera system. In one embodiment, the surface is characterized by a reflectivity and the light level generated by the illumination system is inversely related to that reflectivity.